DENR USE ONLY: ☐ Paper Report ☐ Electronic Data - Email CD (data loaded: Yes / No) Doc/Event #: 4191

NC DENR
Division of Waste Management - Solid Waste

Environmental Monitoring Reporting Form

Notice: This form and any information attached to it are "Public Records" as defined in NC General Statute 132-1. As such, these documents are available for inspection and examination by any person upon request (NC General Statute 132-6).

Instructions:

- **Prepare one form for each individually monitored unit.**
- **Please type or print legibly.**
- Attach a notification table with values that attain or exceed NC 2L groundwater standards or NC 2B surface water standards. The notification must include a preliminary analysis of the cause and significance of each value. (e.g. naturally occurring, off-site source, pre-existing condition, etc.).
- Attach a notification table of any groundwater or surface water values that equal or exceed the reporting limits.
- Attach a notification table of any methane gas values that attain or exceed explosive gas levels. This includes any structures on or nearby the facility (NCAC 13B .1629 (4)(a)(i).
- In accordance with NC General Statutes Chapter 89C and 89E and NC Solid Waste Management Rules 15A NCAC 13B, be sure to affix a seal to the bottom of this page, when applicable.
- Send the original signed and sealed form, any tables, and Electronic Data Deliverable to: Compliance Unit, NCDENR-DWM, Solid Waste Section, 1646 Mail Service Center, Raleigh, NC 27699-1646.

Received JAN 2008 Solid Waste Section

Solid Waste Monitoring Data Submittal Information

Name of entity submitting data (laboratory, consultant, facility owner):

SCS Engineers, PC

Contact for questions about data formatting. Include data preparer's name, telephone number and E-mail address:

Name: Brandon King Phone: 804.598.9480

E-mail: bking@scsengineers.com

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g. October 20-24, 2006)
North Wake County Landfill	9004 Deponie Drive Raleigh, NC 27615	92-09	.1600	December 27, 2007

Environmental Status: (Check all that apply)

☐ Initial/Background Monitoring ☒ Detection Monitoring ☐ Assessment Monitoring ☐ Corrective Action

Type of data submitted: (Check all that apply)

☐ Groundwater monitoring data from monitoring wells
☐ Groundwater monitoring data from private water supply wells
☐ Leachate monitoring data
☐ Surface water monitoring data
☒ Methane gas monitoring data
☐ Corrective action data (specify) _____
☐ Other(specify)

Notification attached?

☐ No. No groundwater or surface water standards were exceeded.
☐ Yes, a notification of values exceeding a groundwater or surface water standard is attached. It includes a list of groundwater and surface water monitoring points, dates, analytical values, NC 2L groundwater standard, NC 2B surface water standard or NC Solid Waste GWPS and preliminary analysis of the cause and significance of any concentration.
☒ Yes, a notification of values exceeding an explosive methane gas limit is attached. It includes the methane monitoring points, dates, sample values and explosive methane gas limits.

Certification

To the best of my knowledge, the information reported and statements made on this data submittal and attachments are true and correct. Furthermore, I have attached complete notification of any sampling values meeting or exceeding groundwater standards or explosive gas levels, and a preliminary analysis of the cause and significance of concentrations exceeding groundwater standards. I am aware that there are significant penalties for making any false statement, representation, or certification including the possibility of a fine and imprisonment.

Robert E Dick / SCS Engineers, PC	Project Director	804.598.9480
Facility Representative Name (Print)	Title	(Area Code) Telephone Number

Robert E. Dick 1/3/08
Signature Date

Affix NC Licensed/ Professional Geologist/Engineer Seal here:

NORTH CAROLINA PROFESSIONAL SEAL 022790 ENGINEER ROBERT E. DICK

Revised 01/2007

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SCS ENGINEERS

January 3, 2008
File No. 02199312.02-2

Mr. Johnny Beal
Facility Manager
Wake County Solid Waste Management Division
PO Box 550
Raleigh, NC 27602

Subject: Fourth Quarter Landfill Gas Monitoring Event – December 27, 2007
North Wake Landfill – Wake County, North Carolina

Dear Johnny:

SCS Engineers, PC (SCS) is pleased to submit the results of the Fourth Quarter Landfill Gas (LFG) Monitoring Event for 2007, performed at the North Wake Landfill on December 27, 2007.

The monitoring was performed in accordance with 15A NCAC 13B.1626(4) at the compliance boundary monitoring probes and on-site structures at the facility. At the facility property boundary, the concentration of methane gas is not to exceed the Lower Explosive Limit (LEL) which is 5 percent by volume (50,000 ppmv). Inside facility structures the concentration of methane gas is not to exceed 25 percent of the LEL (equivalent to 12,500 ppmv).

At each monitoring probe, SCS recorded the subsurface LFG composition (concentrations of methane, carbon dioxide, and oxygen) and pressure using a GEM-500 Infrared Gas Analyzer. Measurements inside facility structures were obtained at critical locations such as conduit penetrations, junction boxes, floor drains, etc. using a Gas-Trac Model No. NGX-6. The results of the probe and on-site structure monitoring are attached as Exhibit 1.

Monitoring was conducted at a total of 26 LFG monitoring probes and 8 on-site structures. LFG monitoring probes M-3, M-22, M-23, M-24, and M-26 exceeded the regulatory limit. The appropriate notification regarding the methane exceedances at probes M-3, M-22, and M-23, M-24, and M-26 was submitted to NCDENR on 1/3/08. The monitoring results indicate that none of the remaining probes exhibited subsurface methane concentrations above the regulatory limit. None of the on-site structures monitored during this event detected significant concentrations of methane.

Based on SCS' discussions with the LFG control system operator, Wake Gas Producers (WGP), we understand the malfunction of a specific system component was identified in mid-December and is suspected to be the cause of these exceedances at select perimeter LFG monitoring probes adjacent to the closed, unlined cell. Upon identifying the problem, WGP

SCS ENGINEERS

EXHIBIT 1. LANDFILL GAS MONITORING PROBES
NORTH WAKE LANDFILL - WAKE COUNTY, NORTH CAROLINA

Date: December 27, 2007
Project No: 02199312.02-2
Weather: Sunny, 55°F

Personnel: DBK
Equipment: GEM-500

Monitoring Probe No.	Time (24-hr)	Methane (% vol)	Carbon Dioxide (% vol)	Oxygen (% vol)	Balance Gas (% vol)	Pressure (in-wc)
M 1	14:57	0.0	0.1	20.1	79.8	-1.0
M 2	15:02	0.0	0.0	20.3	79.7	0.0
M 3	15:06	5.0	6.8	11.9	76.3	0.0
M 4	15:10	0.2	1.5	18.0	80.3	-0.1
M 5	15:14	0.1	14.0	3.3	82.6	-3.2
M 6R	15:18	0.0	0.1	19.5	80.4	-0.4
M 7	14:35	0.2	1.7	18.8	79.3	0.0
M 8	14:40	0.2	1.7	17.6	80.5	-1.8
M 9	14:47	0.1	2.6	18.0	79.3	-0.1
M 10	14:03	2.2	4.1	2.1	91.6	0.0
M 11	16:24	0.0	0.8	19.4	79.8	0.0
M 12	15:48	0.2	0.6	19.5	79.7	0.0
M 13	15:53	0.2	0.4	19.9	79.5	0.0
M 14	15:56	0.1	1.0	19.8	79.1	0.0
M 15	16:06	0.2	5.5	15.3	79.0	0.0
M 16	16:02	0.0	1.1	19.3	79.6	0.0
M 17	16:13	0.2	3.6	16.9	79.3	0.0
M 18	16:18	0.0	2.3	18.3	79.4	0.0
M 19	14:10	0.2	0.5	19.8	79.5	0.0
M 20	14:21	0.1	0.1	20.4	79.4	-0.1
M 21	14:25	0.0	0.0	20.4	79.6	-0.1
M 22	14:30	26.6	16.9	4.1	52.4	0.0
M 23	14:44	11.1	7.4	10.6	70.9	0.1
M 24	14:52	5.3	2.8	15.3	76.6	0.0
M 25	15:22	0.2	3.6	14.3	81.9	0.0
M 26	15:26	32.2	23.6	6.7	37.5	0.0

Notes:
NM = Not Monitored
ND = No Detection; Samples below 0.1% (1000 ppm) methane

Interior Monitoring Location	Methane (% vol)
Scale House	
Front Office	ND
Bathrooms (2)	ND
Hallway	ND
Kitchen	ND
Admin. Offices	
Offices (4)	ND
Reception Area	ND
Bathrooms (2)	ND
Conference Area	ND
Kitchen	ND
Storage Area	ND
Drop Off/Transfer	
Office	ND
Service Bay	ND
Maintenance Shop	
Service Bay	ND
Equipment Maintenance Trailer	
Offices (2)	ND
Bathroom	ND
Conference Area	ND
Field Storage Building (Wake County)	
Service Bay	NM
Drop Off/Transfer	
Offices (6)	NM
Bathrooms (2)	NM
Conference Area	NM
Break Room/Kitchen	NM
Reception	NM
Sign Shop	NM
Copy/Storage Room	NM
Project Room	NM
Tool Room	NM
Shipping and Receiving	NM